

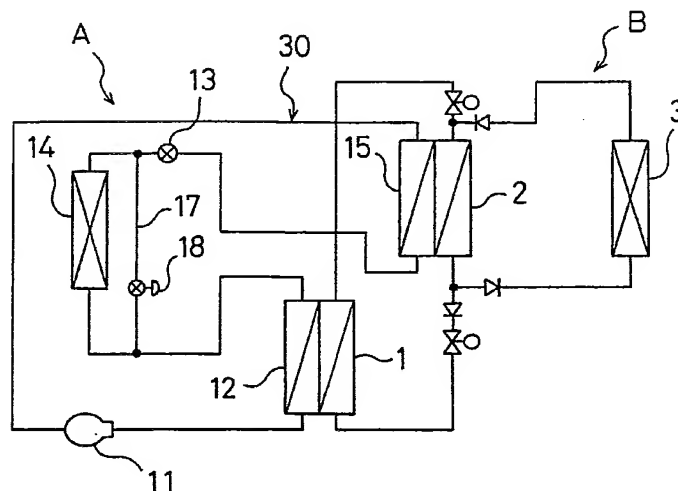
REMARKS

Claims 27-33 remain in this application.

In Section 7 on page 2 of the Office Action, the Examiner rejects claims 27-29, 31 and 32 under 35 U.S.C. §103(a) as being obvious from the teaching of United States Patent No. 6,116,035 to Tanaka, hereinafter the "Tanaka patent") in view of United States Patent No. 5,970,732 to Menin (hereinafter the "Menin patent"). There are two elements of claim 27 that are important to consider in light of the teaching of these references. First of all, a heat exchanger is provided between the feed line for the secondary medium and, second of all, that same heat exchanger is positioned directly upstream of the entrance of the injection valve.

The Examiner takes that position that in Fig. 44 of the Tanaka patent (see diagram below) a refrigeration circuit (A) is disclosed in which the heat exchanger (12, 1) is positioned directly upstream of the entrance of the injection valve (18), whereby the heat exchanger is being passed through on its secondary side (1) by a secondary medium.

Fig. 44



The Applicant respectfully disagrees. In column 64, lines 10 forward of the Tanaka patent, it is explained that the opening of the motor-operated flow rate control valve 18 is set such that the amount of heat radiated in the heat amount adjusting heat exchanger 14 becomes equal to a certain other value. The respective valve 18 is not an injection valve or an expansion valve within the meaning of the present application, but is a control valve, which in a usual way controls the mass flow in the bypass line leading to the heat exchanger 14. On the other hand, the valve in Fig. 44 of the Tanaka patent, which is equivalent to the injection valve of the present application, is the expansion valve 13. However, the heat exchanger 12 is not directly positioned upstream of the entrance of this injection valve.

Additionally, the Menin patent shows in Fig. 1 (see diagram below), a refrigeration circuit with a compressor 1, a condenser 2, an expansion valve 7, and an evaporator 30. At the entrance of the expansion valve 7, a liquid separator-regenerative heat exchanger 3, is positioned. The thermal expansion valve 7 maintains a constant temperature superheating value of the refrigerant vapor after liquid separators 3 (column 6, lines 31-33). Therefore, a secondary medium is not involved unlike the subject invention as claimed.

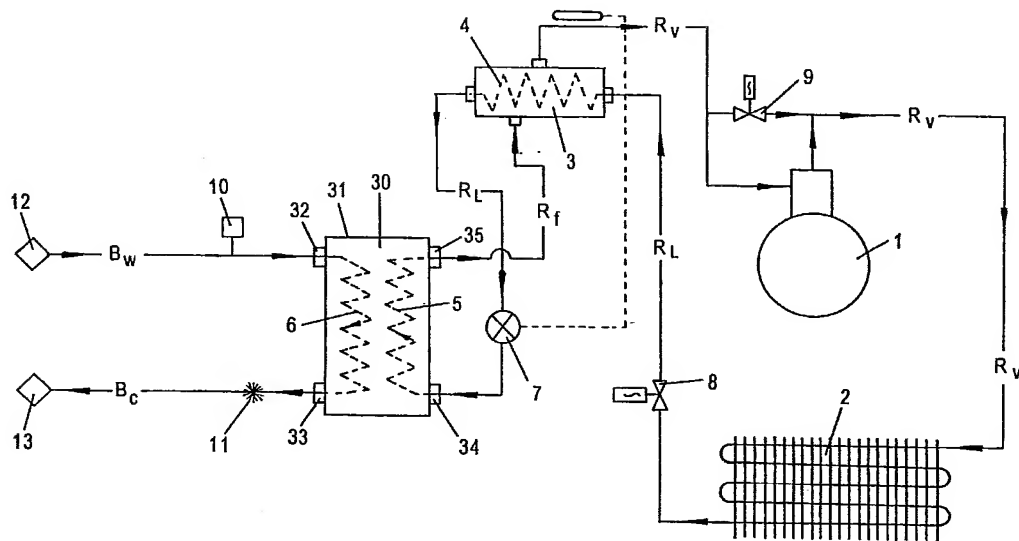


Fig. 1

Application No. 10/587,741
Paper Dated: July 5, 2011
In Reply to USPTO Correspondence of April 5, 2011
Attorney Docket No. 5503-061852

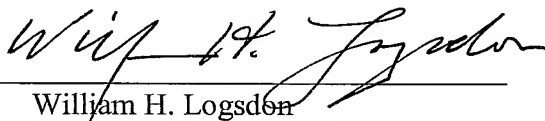
As a result, the Applicant believes that a combination of the teaching of both the Tanaka patent and the Menin patent do not teach the subject invention and furthermore, the Tanaka patent fails to show a heat exchanger directly at the entrance of the expansion valve, while the Menin patent discloses a liquid separator 3 operating without a secondary medium.

For these reasons, the Applicant believes that claim 27 is patentably distinct over the prior art of record and furthermore, by their dependence upon what is believed to be patentably distinct independent claim 27, dependent claims 28-33 are themselves believed to be patentably distinct over the prior art of record.

Reconsideration and allowance of claims 27-33 are respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By 

William H. Logsdon
Registration No. 22,132
Attorney for Applicant
One Gateway Center
420 Ft. Duquesne Blvd., Suite 1200
Pittsburgh, PA 15222
Telephone: (412) 471-8815
Facsimile: (412) 471-4094
E-mail: webblaw@webblaw.com